RL/REG-99-07
Revision 4

DESIGN REVIEW GUIDELINES

January 22, 2002

Office of Safety Regulation

U.S. Department of Energy
Office of River Protection
P.O. Box 450, H6-60
Richland, Washington 99352

PREFACE

As directed by Congress in Section 3139 of the *Strom Thurmond National Defense Authorization Act for Fiscal Year 1999,* the U.S. Department of Energy (DOE) established the Office of River Protection (ORP) at the Hanford Site to manage the River Protection Project (RPP), formerly known as the Tank Waste Remediation System. ORP is responsible for the safe storage, retrieval, treatment, and disposal of the high level nuclear waste stored in the 177 underground tanks at Hanford.

The initial concept for treatment and disposal of the high level wastes at Hanford was to use private industry to design, construct, and operate a Waste Treatment Plant (WTP) to process the waste. The concept was for DOE to enter into a fixed-price contract for the Contractor to build and operate a facility to treat the waste according to DOE specifications. In 1996, DOE selected two contractors to begin design of a WTP to accomplish this mission. In 1998, one of the contractors was eliminated, and design of the WTP was continued. However, in May 2000, DOE chose to terminate the privatization contract and seek new bidders under a different contract strategy. In December 2000, a team led by Bechtel National, Inc. was selected to continue design of the WTP and to subsequently build and commission the WTP.

On January 10,2001, the U.S. Department of Energy published the revised Nuclear Safety Management rule, 10 CFR 830. This rule, in Subpart B, "Safety Basis Requirements," established specific requirements for the establishment and maintenance of the safety basis of DOE nuclear facilities, including the River Protection Project Waste Treatment Plant (RPP-WTP) project.

A key element of the River Protection Project Waste Treatment Plant (RPP-WTP) is DOE regulation of safety through a specifically chartered, dedicated Office of Safety Regulation (OSR). The OSR reports directly to the ORP Manager. The regulation by the OSR is authorized by the document entitled *Policy for Radiological, Nuclear, and Process Safety Regulation of the River Protection Project Waste Treatment Plant Contractor* (DOE/RL-96-25) (referred to as the Policy) and implemented through the document entitled *Memorandum of Agreement for the Execution of Radiological, Nuclear, Process Safety Regulation of the RPP-WTP Contractor* (DOE/RL-96-26) (referred to as the MOA). These two documents provide the basis for the safety regulation of the RPP-WTP at Hanford, including the implementation of regulatory requirements such as 10 CFR 830..

The foundation of both the Policy and the MOA is that the mission of removal and immobilization of the existing large quantities of tank waste by the RPP-WTP Contractor must be accomplished safely, effectively, and efficiently.

The Policy maintains the essential elements of the regulatory program established by DOE in 1996 for the privatization contracts. The MOA clarifies the DOE organizational relationships and responsibilities for safety regulation of the RPP-WTP. The MOA provides a basis for key DOE officials to commit to teamwork in implementing the policy and achieve adequate safety of RPP-WTP activities.

The Policy, the MOA, the RPP-WTP Contract, and the four documents incorporated in the Contract define the essential elements of the regulatory program being executed by the OSR. The four documents incorporated into the Contract (and also in the MOA) are as follows:

> *Concept of the DOE Process for Radiological, Nuclear, and Process Safety Regulation of the RPP Waste Treatment Plant Contractor,* DOE-96-0005,
>
> *DOE Process for Radiological, Nuclear, and Process Safety Regulation of the RPP Waste Treatment Plant Contractor,* DOE/RL-96-0003,
>
> *Top-Level Radiological, Nuclear, and Process Safety Standards and Principles for the RPP Waste Treatment Plant Contractor,* DOE/RL-96-0006, and
>
> *Process for Establishing a Set of Radiological, Nuclear, and Process Safety Standards and Requirements for the RPP Waste Treatment Plant Contractor,* DOE/RL-96-0004.

DOE patterned its safety regulation of the RPP-WTP Contractor to be consistent with the concepts and principles of good regulation (reliability, clarity, openness, efficiency, and independence) used by the Nuclear Regulatory Commission (NRC). In addition, the DOE principles of integrated safety management were built into the regulatory program for design, construction, operation, and deactivation of the facility. The regulatory program for nuclear safety permits waste treatment services to occur on a timely, predictable, and stable basis, with attention to safety consistent with that which would occur from safety regulation by an external agency. DOE established OSR as a dedicated regulatory organization to be a single point of DOE contact for nuclear safety oversight and approvals for the WTP Contractor. The OSR performs nuclear safety review, approval, inspection, and verification activities for ORP using the NRC principles of good regulation while defining how the Contractor shall implement the principles of standards-based integrated safety management.

A key feature of this regulatory process is its definition of how the standards-based integrated safety management principles are implemented to develop a necessary and sufficient set of standards and requirements for the design, construction, operation, and deactivation of the RPP-WTP facility. This process meets the expectations of the DOE necessary and sufficient closure process (subsequently renamed Work Smart Standards process) in DOE Policy 450.3, *Authorizing Use of the Necessary and Sufficient Process for Standards-based Environment, Safety and Health Management*, and is intended to be a DOE approved process under DOE Acquisition Regulations, DEAR 970.5204-2, *Laws, Regulations and DOE Directives*, Section (c). DOE approval of the contractor-derived standards is assigned to the OSR.

The RPP-WTP Contractor has direct responsibility for WTP safety. DOE requires the Contractor to integrate safety into work planning and execution. This integrated safety management process emphasizes that the Contractor's direct responsibility for ensuring that safety is an integral part of mission accomplishment. DOE, through its safety regulation and management program, verifies that the Contractor achieves adequate safety by complying with approved safety requirements.

RECORD OF REVISION

Document Title: Design Review Guidelines

Document Number RL/REG-99-07

Revision Date	Revision Number	Reason for Revision
4/28/99	0	New issue.
6/4/99	1	Clarified requirements for handling design review reports as internal correspondence
3/10/00	2	Included guidance for consideration of industrial hygiene and safety in design review oversight and update references.
5/25/00	3	Inserted language to incorporate the requirement for ISMP assessment inputs in accordance with MD 5.7
1/22/02	4	Revised requirements to be consistent with Bechtel National, Inc. RPP-WTP Contract and design process.

This page intentionally left blank.

Table of Contents

Appendixes

This page intentionally left blank.

DESIGN REVIEW GUIDELINES

1.0 PURPOSE

This document provides guidance for the U.S. Department of Energy (DOE), Office of River Protection (ORP), Office of Safety Regulation (OSR) of the River Protection Project Waste Treatment Plant (RPP-WTP) Contractor and subcontractor personnel assigned to perform oversight of Contractor design reviews of the waste treatment facility. Through oversight of RPP-WTP design reviews, the OSR is able to maintain knowledge of the evolving facility design. The guidance specified herein is intended to ensure consistency, thoroughness, and an appropriate level of formality in performing this oversight. Guidance is provided on Contract[1] requirements, expected RPP-WTP design reviews, background material for the oversight function, meeting preparation, meeting participation, and report generation.

2.0 OBJECTIVES

The objectives of the design review oversight are as follows:

- Verify that adequate design reviews are conducted to ensure that the safety-related design aspects are integrated between disciplines and design teams; follow proven engineering practices and appropriate standards; are constructable, operable, and maintainable; and will support a functional project that meets safety requirements.

- Develop a clear understanding of the evolving safety-related design aspects and be aware of design changes.

- Verify that the design is adequately reviewed and as such will provide a reasonable expectation that Authorization Requests should be acceptable.

3.0 GENERAL GUIDANCE

3.1 Design Review Definition in the RPP-WTP Contract

The Contract provides for the OSR's observation of design reviews in Section C.6, Standard 7, Environmental, Safety, Quality, and Health, paragraph (e)(2)(ix), and states the following:

> "DOE may observe WTP design reviews (and question the presenters) as ex-officio members. These observations provide DOE with continuing information concerning the safety aspects of the evolving design and do not constitute regulatory approval of the matters discussed."

Design review activities by other ORP staff are addressed in the Contract under Section C.6, Standard 3, which states the following:

[1] Contract No. DE-AC27-01RV14136 between DOE and Bechtel National Inc., dated December 11, 2000.

"DOE staff and other Hanford Site Contractor staff identified by DOE, shall be invited to participate in all design overview activities. Design overview activities include any meeting that discusses significant issues associated with the establishment, development and/or progress of the technical requirements for the design. A multi-disciplined design overview shall be scheduled, conducted and documented bi-monthly. The Contractor shall develop a list of systems and items for DOE review and concurrence at least 30 days in advance of the quarterly design overview. In order to improve communications, the Contractor shall provide dedicated office space in the Contractor's design facility for five DOE staff."

3.2 RPP-WTP Design Reviews

The project technical authority is the Engineering Manager (EM). The design effort is managed by engineering discipline groups. These discipline groups include: Process Engineering; Mechanical Systems; Melter Systems; Heating Ventilation, and Air-Conditioning; Mechanical Handling; Control and Instrumentation; Electrical; Plant Design; and Civil, Structural and Architectural. The Discipline Managers, who report to the EM, provide technical oversight and direction. Area Project Managers, who report to the Project Manager, are responsible for facility schedule and budget. Technical quality is the responsibility of the EM, supported by the Discipline Managers.

Internal discipline review by affected design personnel goes on in an informal manner with the objective of developing completed design documents ready for inter-discipline coordination. Construction and Operations personnel often participate in this informal review process.

Off-Project Design Review is performed by Bechtel National, Inc. (BNI) Chief Engineers per Engineering Department Project Instruction (EDPI) 24590-WTP-3DP-G04B-00034, Off-Project Design Review. Discipline Managers develop a Design Control Checklist identifying the specific design documents that require off-project design review.

The Contractor uses Document Review Requests (DRR) to perform internal reviews of documents. These are performed in accordance with Procedure 24590-WTP-GPP-PADC-003, Internal Review and Approval of Documents. After DRR comments are resolved a checker reviews the document, signs the document, and passes it to the responsible manager for approval.

Other reviews may occur through specifically scheduled component and system reviews, reviews of general arrangements, and quarterly reviews with specific agendas as described in EDPI 24590-WTP-3DP-G03B-00001, Design Process.

3.3 OSR Oversight

Selectively, the OSR will attend RPP-WTP design reviews to accomplish the objectives stated in Section 2.0. Special attention will be required to evaluate whether safety design coordination and consistency are achieved throughout the design (see Section 4).

3.4 Background Material

OSR personnel who perform design review oversight should become familiar with the applicable sections of the latest version/revision of the following documents:

- *Initial Safety Analysis Report*
- *Integrated Safety Management Plan*
- *Basis of Design*
- *Safety Requirements Document* (SRD)
- DOE/RL-96-0006, *Top-Level Radiological, Nuclear, and Process Safety Standards and Principles for the RPP Waste Treatment Plant Contractor*
- DOE/RL-96-0003, *DOE Regulatory Process for Radiological, Nuclear, and Process Safety Regulation of the RPP Waste Treatment Plant Contractor*
- Quality Assurance Manual (QAM)
- Engineering Department Project Instruction (EDPI) 24590-WTP-3DP-G04B-00034, Off-Project Design Review
- EDPI 24590-WTP-3DP-G03B-00001, Design Process
- Procedure 24590-WTP-GPP-PADC-003, Internal Review and Approval of Documents
- *Functional Specification*
- RL/REG-98-26, *Inspection Technical Procedure*, Inspection Technical Procedure I-104, "Design Process Assessment"
- RL/REG-97-05, *Office of Safety Regulation Management Directives*, Management Directive 2.1 "Information Management."
- RL/REG-98-16, *Office of Safety Regulation Interface Plan*

4.0 REVIEW GUIDANCE

4.1 OSR Design Review Observers

Design review observers will be identified to perform oversight of selected RPP-WTP design reviews. Observers will be selected based on safety review assignments and expertise such as electrical/instrumentation and control, mechanical, structural/civil, chemistry, chemical engineering, nuclear engineering, radiation protection, materials engineering, safety hazard and risk analysis, and architectural for life safety issues.

The following describes how observers will be selected and actions required of observers.

4.1.1 Selection of Design Review Observers

The OSR-designated design review coordinator is responsible for identifying and acquiring appropriate resources to observe design reviews. Observers will be selected based on type and content of the particular design review, safety review assignments, and expertise.

4.1.2 Develop Strategy for Review

Observers will develop a strategy for each assigned design review. This strategy will depend on the stage of the design and the anticipated content of the design review. Observers will identify key areas (Sections 4.2.1 and 4.2.2) that may be of concern or have the potential for problems.

4.2 Design Review Meetings

The OSR design review observers will selectively attend single-discipline, multi-discipline, and bi-monthly design reviews.

4.2.1 Meeting Preparation

Design review observers will review design media made available before the planned design review or at the design review. OSR design review observers will not retain preliminary design media. Design review observers should consider the following key areas:

Proven engineering practices – Safety technologies incorporated into the facility design should be proven by experience or testing and should be reflected in approved codes and standards. Significant new design features should be introduced only after thorough research and model or prototype testing at the component, system, or facility level, as appropriate.

Safety features – Observers should assess whether the facility design provides for the prevention and mitigation of the risks associated with radiological and chemical material inventories, and energy sources.

The SRD identifies safety criteria and standards that should be applied to structures, systems, and components (SSCs). The *Basis of Design* (BOD) document describes the design codes, criteria, and objectives that have been identified for use by each discipline. The design should be consistent with the BOD. The OSR design review observers should review these documents and use the safety criteria to assess the design and design review process.

Key engineering and design safety criteria from the SRD that should be considered by the design review observers in assessment of Contractor design reviews are summarized below:

1. Confinement

    a. The facility shall be designed to retain radioactive and hazardous material through a conservatively designed confinement system for normal operations, anticipated operational occurrences, and accident conditions. (SRD, Section 4.2-1)

2. Accident prevention/mitigation

    a. Important-to-safety (ITS) SSCs shall be designed to withstand the effects of events such as earthquakes, wind, and floods without loss of capability to perform specified safety functions required as the result of the events. (SRD, Section 4.1-3)

    b. Engineered safety systems shall be designed (1) to initiate automatically the operation of appropriate systems to ensure that specified acceptable design limits are not exceeded as a result of anticipated operational occurrences, and (2) to sense accident conditions and to initiate the operation of ITS systems and components. The ability to manually initiate engineered safety systems shall be provided. (SRD, Section 4.3-1)

    c. Air treatment systems, instrument air systems, electric power systems, and cooling water systems designated as Safety Design Class[1] shall be designed to ensure their operability under normal and accident conditions. (SRD, Sections 4.4-6, 4.4-11, 4.4-15, and 4.4-19)

3. Inspection, testing, and maintenance

    a. ITS SSCs shall be designated, designed, and constructed to permit appropriate inspection, testing, and maintenance throughout their operating lives to verify their continued acceptability for service with an adequate safety margin. (SRD, Section 4.4-4)

[2] Safety Design Class refers to structures, systems, and components that, by performing their specified safety function, prevent workers or the maximally exposed member of the public from receiving a radiological exposure that exceeds the accident exposure standards defined in the SRD. Safety Design Class also applies to those features that, by functioning, prevent the worker or maximally exposed member of the public from receiving a chemical exposure that exceeds the *Emergency Response Planning Guideline-2* (American Industrial Hygiene Association 1988) chemical release standard. These features credited for preventing a criticality event are also designated as Safety Design Class.

4. Reliability/redundancy

   a. When single-failure protection is required, ITS protection systems shall be separated from control systems to the extent that failure of any single control system leaves intact a system satisfying all reliability, redundancy, and independence requirements. Interconnection of the protection and control systems shall be limited to ensure that safety is not significantly impaired. In addition to specific SRD requirements cited herein, Appendix A to the SRD describes when single-failure protection is generally required, based on the unmitigated consequences of a postulated accident. (SRD, Section 4.3-5)

   b. Air treatment systems, instrument air systems, and cooling water systems designated as Safety Design Class shall have suitable redundancy in components and features and suitable interconnections, leak detection, isolation, and confinement capabilities to ensure that for onsite electric power system operation (assuming offsite power is not available) and for offsite electric power system operation (assuming onsite power is not available) its safety function can be accomplished, assuming a single failure. The use of alternate equipment may be considered to satisfy the single-failure requirement. (SRD, Sections 4.4-5, 4.4-13, and 4.4-18)

5. Ventilation

   a. Ventilation systems and offgas systems must be provided where necessary to control radiological and chemical material releases and the generation of flammable and explosive gases during normal and off-normal conditions. (SRD, Section 4.4-8)

6. Electrical power/instrumentation and control

   a. An onsite electric power system and an offsite electric power system shall be provided to permit functioning of systems designated as Safety Design Class. The safety function for each system (assuming the other system is not functioning) shall be to provide sufficient capacity and capability to ensure that Safety Design Class functions are maintained in the event of postulated accidents. The onsite electric power supplies, including the batteries, and the onsite electric distribution system shall have sufficient independence, redundancy, and testability to perform their specified safety functions assuming a single failure. (SRD, Section 4.4-9)

   b. Physical and electrical separation shall be provided between diverse or redundant Safety Design Class electrical systems. Associated circuits should be avoided. (SRD, Section 4.4-10)

   c. Instrument air systems designated as Safety Design Class that provide air to a non-Safety Design Class air system shall be provided with adequate isolation such that failure of the non-Safety Design Class portion of the system will not prevent the Safety Design Class portion from performing its specified safety function.

(SRD, Section 4.4-14)

d. Instrument air systems supplying air to ITS equipment shall provide clean, dry, and oil-free air to this equipment. The instrument air shall be free of all corrosive and hazardous gases that may be drawn into the system. (SRD, Section 4.4-17)

e. Safety Design Class motor-operated valves shall be specified to ensure operability against the maximum differential pressure that might occur while performing their specified accident prevention or mitigation safety functions at the minimum specified terminal voltage. Mispositioned valves do not have to be considered in determining the maximum differential pressure. Safety Design Class motor-operated valves shall be periodically tested to confirm their ability to perform their specified accident prevention or mitigation safety functions. (SRD, Section 4.4-21)

8. Fire protection and fire safety

a. Two reliable and separate water supplies of adequate capacity for fire suppression shall be provided. (SRD, Section 4.5-1)

b. Buildings containing a significant quantity of radioactive and/or hazardous material shall be constructed of noncombustible or fire-resistive material, where appropriate. (SRD, Section 4.5-2)

c. Confinement of the fire to its origin should be achieved through passive parries and by activating systems such as fire and smoke dampers, exhaust fans, and drainage pumps to prevent migration of gases, hot combustion products, and flammable liquids outside the fire area. (SRD, Section 4.5-3)

d. Automatic fire-extinguishing systems shall be included in all areas subject to loss of Safety Design Class systems, significant life-safety hazards, or unacceptable program interruption, unless the Fire Hazards Analysis dictates otherwise. As determined by the Fire Hazards Analysis, special hazards shall be provided with additional fixed protection systems. (SRD, Section 4.5-4)

e. Redundant Safety Design Class systems and components should be located in separate fire areas. Redundant, primary, and secondary fire protection systems shall be provided in areas where Safety Design Class systems and components are vulnerable to fire damage and where no redundant safety capability exists outside of the fire area. (SRD, Section 4.5-5)

f. The design shall incorporate life-safety features including means to notify and evacuate building occupants in the event of a fire, such as a fire detection or fire alarm system and illuminated, or protected egress paths. (SRD, Section 4.5-6)

g. The facility shall include a fire detection system to detect a fire and activate alarm systems so that measures for confinement and suppression of the fire and personnel evacuation may start promptly. The detection system shall include a

means to summon the Hanford Site Fire Department. The system shall be capable of operation without offsite power. (SRD, Section 4.5-7)

h. The facility shall include physical access and appropriate equipment, such as an interior standpipe system, to facilitate effective intervention by the Hanford Site Fire Department. (SRD, Section 4.5-8)

i. The facility design shall provide for prevention of accidental release of significant quantities of contaminated products of combustion and fire fighting water to the environment. This can be provided by such features as ventilation control and filter systems, curbs, dikes, and holding ponds. (SRD, Section 4.5-9)

Level of review – OSR design review observers should consider the adequacy of time allowed and the number, type, and depth of comments generated during the review. Reviews conducted with the DRR process, Off-Project reviews, and review documentation will be addressed in the "Design Process Assessment" (Inspection Procedure I-104).

Coordination and consistency – For a project of this magnitude, ensuring adequate coordination of engineering disciplines is important. Where safety design interfaces occur among disciplines or project teams, continuity should be verified (e.g., is the electrical power supply compatible with the mechanical equipment identified and is the room size adequate for the electrical equipment?).

Observers should evaluate whether coordination is occurring among design teams, especially with the site utilities and other contract-defined interfaces (see the Contract, Section C.9, and RL/REG-98-16, *Office of Safety Regulation Interface Plan* [e.g., do the building utilities match the site service utilities?]). With a large number of designers, the potential exists for similar systems to be designed differently. Even though many of the systems are independent and in separate buildings, the designs should use similar criteria, technology, and materials, where possible, so that the complexity of the systems is reduced and operations and maintenance are simplified. All ITS design is subject to the design control requirements of 10 CFR 830 Subpart A as described in the approved QAM.

Design changes – Design changes that are not clearly communicated create the potential for conflicts. Design review observers should attempt to determine whether design changes are well documented, reviewed, approved, and widely distributed. This also will be verified through the OSR's "Configuration Management Assessment" (Procedure I-102) and the "Design Process Assessment" (Procedure I-104).

Constructability problems – The safety-related aspects of the design should allow for standard construction methods. Complicated construction methods increase the risk that the "as built" condition will vary from the actual design. Design review observers should consider items such as potential interferences with existing utilities or structures, construction equipment access, and offsite "modular" constructing of components.

Plans and specification coordination – Contradictions between plans and specifications can occur. OSR design review observers should determine whether adequate cross checking has occurred (e.g., do materials and equipment in plans agree with those in specifications?).

4.2.2 Meeting Participation

During design review meetings, the OSR will participate as ex-officio members. The OSR design review observers may also request clarification of questions that arise during the review and actively question Contractor personnel to understand design intent. Also, OSR design review observers should assess how the Contractor's integrated safety management approach is implemented at the design level. Design review observers will observe the interactions of the design review group and take notes. Design review observers should not hesitate to ask clarifying questions or to address a perceived deficiency in the proceedings or design. OSR design review observers shall not provide feedback that could be construed as regulatory approval of matters discussed, or direction to the Contractor.

Review participants – The OSR design review observers should note who participates in the meeting and whether they are appropriate for the type of review.

Review comments/documentation/resolution – The OSR design review observers should (1) note whether review comments are documented, (2) read written review comments and listen to comments during the meeting to get a feeling for the depth of review, (3) check whether prior comments have been adequately addressed, and (4) determine whether comment resolutions are being incorporated into the design and if the individual making the comments has verified inclusion of the comments.

Design review procedures – Design review observers should assess whether review procedures are being followed.

Safety design interfaces – The OSR design review observers should assess discussions relating to design interfaces to ensure adequate coordination is occurring.

Change control – The OSR design review observers should note any apparent safety design changes and any discussions of how these are disseminated to other disciplines and project teams.

4.3 Design Review Reporting

For each review attended, the OSR design review observers will document the meeting objectives, observations, and conclusions. Appendix B provides a template for documenting this information. This documented information should be provided to the Design Review Coordinator within two weeks for use in preparing a periodic design review report.

The Design Review Coordinator will prepare periodic design review reports summarizing significant design review observations for OSR staff information.

The reports will be submitted to the Safety and Standards Review Official for concurrence. The Design Review Coordinator will approve and distribute the report to the OSR staff for information. Information captured in design review reports represents staff opinion and analysis of Contractor work in progress, not an OSR position. Design review reports are internal correspondence and will be handled and distributed according to Management Directive 2.1,

"Information Management."

Each design review report will contain a cover page and an introduction, observations, and conclusion section using the format shown in Appendix A and as described below.

For design reviews, every three months the OSR staff member in charge of the activity will submit any significant input (with the concurrence of the team leader) to the Integrated Safety Management Plan (ISMP) Coordinator. The input will assess contractor performance relative to the ISMP. Inputs should be based on the reviews conducted during that time frame. The guidance for these inputs is provided in Management Directive and Handbook 5.7, "Assessment of Contractor ISMP Implementation."

4.3.1 Cover Page

A cover page that identifies basic information relating to the design review will be attached to the report. The reports will be numbered chronologically by year (yy) and sequentially by number (xx) using the following format: DRR-yy-xx, (i.e., DRR-99-01).

4.3.2 Introduction

The introduction will state the type of review and the date it was conducted.

4.3.3 Observations

The OSR Design Review Coordinator will consolidate observations generated by design review observers. Observations should be reviewed and grouped according to their discipline and significance. Observations that would be of value for future OSR observation of design review and those with potential safety impacts should be identified in the report.

4.3.4 Conclusions

Observations will be evaluated and conclusions derived. Conclusions generally will relate to one or more observations made during the design review. Conclusions can easily be made too narrow or too broad; the report writer's task is to match the scope of the conclusions to what the review results will support. The conclusion shall identify any new issues that have the potential to make construction authorization difficult.

4.4 Corrective Action Evaluation from the Design Review Assessment

If the OSR assessment identifies areas within the Contractor review process or safety design that should be improved or need attention, the Design Review Coordinator should subsequently evaluate whether the Contractor has taken action to improve these areas or whether further discussions are necessary to ensure that those areas are adequately resolved.

The Design Review Coordinator will be responsible for preparing correspondence from the OSR to the Contractor identifying weaknesses in the safety design or the design review process. Items requiring action should be identified in the Consolidated Action Reporting System. Significant safety issues will be addressed according to Management Directive 5.3, "Corrective Action Program Implementation." This is outgoing correspondence and will be handled and distributed according to Management Directive 2.1, "Information Management."

5.0 REFERENCES

Basis of Design, 24590-WTP-DB-ENG-01-001, Rev. A, August 20, 2001.

DOE/RL-96-0003, *DOE Process for Radiological, Nuclear, and Process Safety Regulation of the RPP Waste Treatment Plant Contractor*, Rev. 2, U.S. Department of Energy, Office of River Protection, 2001.

DOE/RL-96-0006, *Top-Level Radiological, Nuclear, and Process Safety Standards and Principles for the RPP Waste Treatment Plant Contractor*, Rev. 2, U.S. Department of Energy, Office of River Protection, 2001.

EDPI 24590-WTP-3DP-G04B-00034, Off-Project Design Review, Rev. 0, October 8, 2001.

EDPI 24590-WTP-3DP-G03B-00001, Design Process, Rev. 0, TBD.

Procedure 24590-WTP-GPP-PADC-003, Internal Review and Approval of Documents, Rev. 0, September 5, 2001.

Functional Specification, 24590-WTP-PL-G-01-001, Rev. A, August 2001.

Initial Safety Analysis Report, BNFL-5193-ISAR-01, Rev. 2, as amended.

Integrated Safety Management Plan, BNFL-5193-ISP-01, Rev. 6, as amended.

Quality Assurance Manual, 24590-WTP-QAM-QA-01-001, Rev. 0, August 31, 2001.

RL/REG-97-05, *Office of Safety Regulation Management Directives*, Rev. 2, U.S. Department of Energy, Office of River Protection, 2001.
MD 2.1, "Information Management"
MD 5.3, "Corrective Action Program Implementation."

RL/REG-98-16, *Office of Safety Regulation Interface Plan*, Rev. 2, U.S. Department of Energy, Richland Operations Office, 2000.

RL/REG-98-26, *Inspection Technical Procedure*, U.S. Department of Energy, Office of River Protection, 2001.
I-102, "Configuration Management Assessment"
I-104, "Design Process Assessment"

Safety Requirements Document (SRD), 24590-WTP-SRD-ESH-01-001-02, Rev. 0a, October 4, 2001

6.0 LIST OF TERMS

BNFL	BNFL Inc.
BNI	Bechtel National, Inc.
BOD	Basis of Design
CAR	Construction Authorization Request
DOE	U.S. Department of Energy
DRR	Document Review Request
EDPI	Engineering Department Project Instruction
EM	Engineering Manager
ISMP	Integrated Safety Management Plan
ITS	Important-to-Safety
OAR	Operations Authorization Request
ORP	Office of River Protection
OSR	Office of Safety Regulation
PCAR	Partial Construction Authorization Request
QAM	Quality Assurance Manual
SRD	Safety Requirements Document
SSC	structures, systems, and components
RPP-WTP	River Protection Project Waste Treatment Plant

Appendix A. Design Review Report Format

This page intentionally left blank.

Design Review Report Format

Cover Page

Report Number: DRR-yy-xx, (i.e., DRR-00-01)

Facility:

Location:

Dates:

Reviewers:

Approved: _____
Design Review Coordinator

Date: _____

DESIGN REVIEW REPORT FORMAT

The following are the sections to be included in the design review reports. If the contents of the report contain proprietary information, a disclaimer notice and appropriate headers and footers must be inserted into the report.

Table of Contents

Appendix B. Observer Documentation

Design Review Title:	
Date of Review:	
Observer:	
Review Objective (What was intended to be accomplished and what was accomplished):	
Observations with Safety Significance (Describe the observation and relate the observation to a standard or requirement (see section 4.2.1)):	
Observations of General Interest to OSR Staff (Information that would enhance OSR staff understanding of the project):	
Observations Requiring Follow-up (Identify the observation and type of follow-up: meeting, inspection, letter, etc.):	
Do Observations Impact the PCAR, CAR, OAR? (If yes, identify the observation and authorization):	
Conclusions from the Review:	

This page intentionally left blank.